

REMARKS

Claims 1-42 are pending in the present application. In the Office Action mailed September 6, 2005, the Examiner took the following action: (1) objected to the drawings; (2) objected to the specification due to informalities; (3) rejected claims 7 and 21 under 35 U.S.C. 112, second paragraph, as being indefinite; (4) rejected claims 1-3, 6, and 7 under 35 U.S.C. 102(b) as being anticipated by Rasmussen (U.S. 3,874,244); (5) rejected claims 1-3, 6, 7, 10, 13-17, 20, 21, and 26-28 under 35 U.S.C. 102(b) as being anticipated by Adams (U.S. 3,627,436); (6) rejected claims 1-3, 6-12, 14-17, 2-25, 27-32, and 35-40 under 35 U.S.C. 102(e) as being anticipated by Boyle-Davis (U.S. 6,843,328); and (7) rejected claims 13, 26, 41, and 42 under 35 U.S.C. 103(a) as being unpatentable over Boyle-Davis in view of Adams.

The Examiner acknowledged, however, that claims 4, 5, 18, 9, 33, and 34 would be allowable if rewritten to include the limitations of their respective base and intervening claims. Applicants wish to thank the Examiner for acknowledging the presence of allowable subject matter, and respectfully request reconsideration of the application in view of the foregoing amendments and the following remarks.

I. Objections to the Drawings

The Examiner objected to the drawings under 37 C.F.R. 1.83(a) on grounds that the drawings allegedly fail to show a limitation recited in claims 5, 19, and 34, specifically, the recitation of the "conically shaped apertures." Applicants submit concurrently herewith amended formal drawings which include new Figure 7, which shows the "conically shaped apertures" recited in claims 5, 19, and 34. Applicants respectfully submit that support for the new Figure 7 is found in the Detailed Description at page 5, line 33, through page 6, line 5, and in Figures 5 and 6, and in the subject claims 5, 19, and 34. No new matter has been added. Accordingly, Applicants respectfully request acceptance of the amended formal drawings, and reconsideration and withdrawal of the objection to the drawings.

II. Objections to the Specification

The Examiner objected to the specification due to informalities. Applicants have amended the specification and/or drawings to correct the informalities noted by the Examiner.

Specifically, the following informalities have been corrected:

(1) on page 3, line 23, the reference to cross-sectional view “A-A” has been amended to – 6-6 --;

(2) on page 5, line 34, the reference to cross-sectional view “A-A” has been amended to – 6-6 --;

(3) on page 7, line 1, the character reference to “second baseplate 170” has been amended to – second baseplate 172 --; and

(4) on page 7, line 2, the character reference to “second baseplate 170” has been amended to – second baseplate 172 --.

Applicants respectfully request reconsideration and withdrawal of the objections to the specification in view of the foregoing amendments.

III. Rejections of claims under 35 U.S.C. §112, second paragraph.

The Examiner rejected claims 7 and 21 under 35 U.S.C. 112, second paragraph, as being indefinite. More specifically, the Examiner asserted that the phrase “the rail comprises a first rail and wherein the track assembly includes a second rail” is indefinite. Applications have amended claims 7 and 21 to more distinctly claim the subject matter in question. More specifically, as amended, claims 7 and 21 recite (in relevant part) “wherein the at least one rail comprises a first rail and a second rail oriented approximately parallel to the first rail.” Applicants respectfully

submit that amended claims 7 and 21 are now sufficiently definite, and respectfully request reconsideration and withdrawal of these rejections.

IV. Rejections of claims under 35 U.S.C. §102(b) and §103(a).

Claims 1-2 and 4-14

As amended, claim 1 recites an apparatus for supporting a manufacturing tool relative to a workpiece, the apparatus comprising a track assembly adapted to be attached to the workpiece and including at least one rail, the rail having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises one or more tapered apertures.* (emphasis added).

Rasmussen (U.S. 3,874,244)

Rasmussen teaches an apparatus that includes a direct drive pinion assembly 54 affixed to a workpiece that engages a pair of rails 44, each rail 44 having a plurality of apertures 74 disposed therein. As best shown in Figures 3 and 6, according to Rasmussen, the apertures 74 are rectangular, non-tapered apertures.

Rasmussen fails to disclose, teach, or fairly suggest the apparatus recited in Applicants' claim 1. Specifically, Rasmussen fails to teach or suggest an apparatus that includes a "rail having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises one or more tapered apertures*" as recited in claim 1 (emphasis added). Accordingly, claim 1 is allowable over Rasmussen. Claims 2 and 4-14 depend from claim 1 and are also allowable over Rasmussen for the same reasons as claim 1 and also due to additional limitations recited in those claims.

Adams (U.S. 3,627,436)

Adams teaches a tool feeding apparatus that includes a track 11 mounted to a workpiece 12, the track 11 having a plurality of positioning slots 157 disposed therethrough. (8:69-70). As best shown in Figures 1, 2, 7, and 8, according to Adams, the apertures 74 are rectangular, non-tapered apertures.

Adams fails to remedy the above-noted absent teachings of Rasumussen, and fails to disclose, teach, or fairly suggest the apparatus recited in Applicants' claim 1. Specifically, Adams fails to teach or suggest an apparatus that includes a "rail having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises one or more tapered apertures*" as recited in claim 1 (emphasis added). Accordingly, claim 1 is allowable over Adams, either singly or in combination with Rasmussen. Claims 2 and 4-14 depend from claim 1 and are also allowable over Adams for the same reasons as claim 1 and also due to additional limitations recited in those claims.

Boyl-Davis (U.S. 6,843,328)

Boyl-Davis teaches a flexible track drilling machine 20 that includes a pair of rails 22, 24 coupled to a workpiece, and a carriage 30 moveably mounted on the rails 22, 24. (5:5-8). As best shown in Figures 1-5, according to Boyl-Davis, the rails 22, 24 do not have apertures disposed therethrough.

Boyl-Davis fails to remedy the above-noted absent teachings of Rasumussen and Adams, and fails to disclose, teach, or fairly suggest the apparatus recited in Applicants' claim 1. Specifically, Boyl-Davis fails to teach or suggest an apparatus that includes a "rail having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack*

comprises one or more tapered apertures” as recited in claim 1 (emphasis added). Accordingly, claim 1 is allowable over *Boyl-Davis*, either singly or in combination with *Rasmussen* and *Adams*. Claims 2 and 4-14 depend from claim 1 and are also allowable over *Boyl-Davis* for the same reasons as claim 1 and also due to additional limitations recited in those claims.

Claims 15-16 and 18-28

Similarly, claim 15 recites an assembly for performing a manufacturing operation on a workpiece, the assembly comprising a track assembly adapted to be attached to the workpiece and including at least one rail, the rail having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises one or more tapered apertures*; a carriage moveably coupled to the track assembly and moveable relative to the workpiece along the track assembly, the carriage including a tool support adapted to receive and support a manufacturing tool; and a manufacturing tool coupled to the tool support and adapted to be engageable with the workpiece to perform the manufacturing operation on the workpiece. (emphasis added).

For the reasons set forth above, the Cited References (*Rasmussen*, *Adams*, and *Boyl-Davis*), either singly or in combination, fail to disclose, teach, or fairly suggest the assembly recited in claim 15. Specifically, the Cited References fail to teach or suggest an assembly that includes a “rail having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises one or more tapered apertures*” as recited in claim 15 (emphasis added). Accordingly, claim 15 is allowable over the Cited References, either singly or in combination. Claims 16 and 18-28 depend from claim 15 and are also allowable over the Cited References for the same reasons as claim 15 and also due to additional limitations recited in those claims.

Claims 29-31 and 33-42

Similarly, claim 29 recites a method of performing a manufacturing operation on a workpiece, the method comprising attaching a track assembly to the workpiece, the track assembly including at least one rail having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises one or more tapered apertures*; moveably supporting a manufacturing tool on the track assembly; engaging a drive apparatus with the rack; and driving the manufacturing tool along the track assembly using the drive apparatus. (emphasis added).

For the reasons set forth above, the Cited References (Rasmussen, Adams, and Boyd-Davis), either singly or in combination, fail to disclose, teach, or fairly suggest the method recited in claim 29. Specifically, the Cited References fail to teach or suggest a method that includes a “attaching a track assembly to the workpiece, the track assembly including at least one rail having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack comprises one or more tapered apertures*” as recited in claim 29 (emphasis added). Accordingly, claim 29 is allowable over the Cited References, either singly or in combination. Claims 30-31 and 33-42 depend from claim 29 and are also allowable over the Cited References for the same reasons as claim 29 and also due to additional limitations recited in those claims.

For the foregoing reasons, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 1-2, 4-16, 18-31, and 33-42.

V. *New claims 43-48.*

Claims 43-45

New claim 43 recites an assembly for performing a manufacturing operation on a workpiece, the assembly comprising a track assembly attachable to the workpiece and including at least one rail, the rail having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack includes a plurality of apertures*; and a carriage moveably coupled to the track assembly and moveable relative to the workpiece along the track assembly, *the carriage including a manufacturing tool that performs the manufacturing operation on the workpiece, and a drive assembly having at least one rotatable drive gear that includes a plurality of outwardly-projecting teeth configured to fittingly engage the plurality of apertures as the drive gear is rotated, the drive gear moving the carriage along the track assembly as the drive gear is rotated.* (emphasis added).

The Cited References fail to disclose, teach, or fairly suggest the assembly recited in claim 43. More specifically, according to Rasmussen, the direct drive pinion assembly 54 is affixed to the workpiece 76 rather than the track assembly, as taught by Applicants. Furthermore, Rasmussen fails to teach or fairly suggest a carriage that includes *a manufacturing tool that performs the manufacturing operation on the workpiece, or a drive assembly having at least one rotatable drive gear that includes a plurality of outwardly-projecting teeth configured to fittingly engage the plurality of apertures as the drive gear is rotated, the drive gear moving the carriage along the track assembly as the drive gear is rotated.* (emphasis added).

Similarly, Adams fails to teach or fairly suggest the assembly recited in claim 43. Specifically, according to Adams, the drilling apparatus 10 is advanced along the track 11 by a pair of reciprocating (*i.e.* non-rotating) latching mechanisms 20, 24 (8:40-45), the latching mechanisms 20, 24 including non-rotating latching elements 152, 153 (8:69-75; 9:1-4; 9:21-25;

10:1-3) that “slide” along the track 11 until a portion of each element “finds and snaps into the next positioning slot 157” (10:29-40).

Finally, *Boyl-Davis* fails to teach or suggest a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack includes a plurality of apertures*; and a carriage moveably coupled to the track assembly and moveable relative to the workpiece along the track assembly, *the carriage including ... a drive assembly having at least one rotatable drive gear that includes a plurality of outwardly-projecting teeth configured to fittingly engage the plurality of apertures as the drive gear is rotated, the drive gear moving the carriage along the track assembly as the drive gear is rotated.* (emphasis added).

Accordingly, Applicants respectfully submit that claim 43 is allowable over the Cited References, either singly or in combination. Claims 44-45 depend from claim 43 and are allowable over the Cited References for the same reasons as claim 43 and also due to additional limitations recited in those claims.

New Claims 46-48

New claim 47 recites a method of performing a manufacturing operation on a workpiece, the method comprising attaching a track assembly to the workpiece, the track assembly including at least one rail having a longitudinally-extending neutral axis and a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack includes a plurality apertures*; moveably supporting a manufacturing tool on the track assembly; engaging a drive assembly with the rack, *the drive assembly having at least one rotatable drive gear that includes a plurality of outwardly-projecting teeth configured to fittingly engage the plurality of apertures as the drive gear is rotated*; and *driving the manufacturing tool along the track assembly including rotating the drive gear.* (emphasis added).

The Cited References fail to disclose, teach, or fairly suggest the method recited in claim 46. More specifically, according to Rasmussen, the direct drive pinion assembly 54 is affixed to the workpiece 76 rather than the track assembly, as taught by Applicants. Furthermore, Rasmussen fails to teach or fairly suggest a carriage that includes *a manufacturing tool that performs the manufacturing operation on the workpiece, or a drive assembly having at least one rotatable drive gear that includes a plurality of outwardly-projecting teeth configured to fittingly engage the plurality of apertures as the drive gear is rotated, the drive gear moving the carriage along the track assembly as the drive gear is rotated.* (emphasis added).

Similarly, Adams fails to teach or fairly suggest the method recited in claim 46. Specifically, according to Adams, the drilling apparatus 10 is advanced along the track 11 by a pair of reciprocating (*i.e.* non-rotating) latching mechanisms 20, 24 (8:40-45), the latching mechanisms 20, 24 including non-rotating latching elements 152, 153 (8:69-75; 9:1-4; 9:21-25; 10:1-3) that “slide” along the track 11 until a portion of each element “finds and snaps into the next positioning slot 157” (10:29-40).

Finally, Boyl-Davis fails to teach or suggest attaching a track assembly to the workpiece wherein the track assembly includes a rack extending along a pitch line that at least approximately coincides with the longitudinally-extending neutral axis, *wherein the rack includes a plurality of apertures*; and engaging a drive assembly with the rack, *the drive assembly having at least one rotatable drive gear that includes a plurality of outwardly-projecting teeth configured to fittingly engage the plurality of apertures as the drive gear is rotated*; and *driving the manufacturing tool along the track assembly including rotating the drive gear.* (emphasis added).

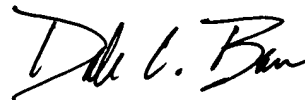
Accordingly, Applicants respectfully submit that claim 46 is allowable over the Cited References, either singly or in combination. Claims 47-48 depend from claim 46 and are allowable over the Cited References for the same reasons as claim 46 and also due to additional limitations recited in those claims.

CONCLUSION

For the foregoing reasons, Applicants respectfully request reconsideration and withdrawal of the rejections and objections of claims 1-2, 4-16, 18-31, and 33-42 and allowance of same, as well as allowance of new claims 43-48. If there are any remaining matters that may be handled by telephone conference, the Examiner is kindly invited to call the undersigned at his convenience.

Respectfully submitted,

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Enclosures: Amended Formal Drawings

MAIL CERTIFICATE

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